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37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit: Dec 29, 2003 By: James E. Bradley

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF
Larry R. Bersuch, et al.

DOCKET NO. TA-00524

SERIAL NO.: 09/938,065

EXAMINER: Todd J. Kilkenny

FILED: 08/23/2001

GROUP ART UNIT: 1733

TITLE: **Paste-Bond Clevis Joint**

DECLARATION

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Stephen D. Owens, state the following:

I am employed by Lockheed Martin Corporation as an engineer. My title is Engineering Senior Staff, Joint Strike Fighter Airframe Certification. I have been employed with Lockheed Martin and its predecessor, General Dynamics, for nineteen years.

Lockheed Martin Corporation is the assignee of the above-identified patent application.

I am a co-author of a technical paper *Interlaminar Reinforced Composites Development for Improved Damage Tolerance* (copy of first page attached). That technical paper was presented at a Closed Session of the Society for Advancement of Material and Process Engineering (SAMPE) in 2000. I did not attend that particular session, but have attended other

Closed Sessions and am familiar with how these sessions are held. Closed Sessions are meetings generally attended by representatives from the United States government and various military contractors. The purpose of the meetings is to communicate general information about various research projects underway at the different facilities. In my experience, often the U.S. government will request various contractors to present papers at these meetings.

Entrance to a Closed Session is restricted. I do not have any written materials concerning entry to the particular Closed Session where the subject technical paper was given. However, I am attaching to this declaration a portion of document advertising a recent SAMPE meeting. As shown on the second page, in order to be admitted to a Closed Session, one needs to have certification credentials based on a DD Form 2345 that has been approved by the government, or one must be employed by a company that is in the DoD's quarterly qualified U.S. contractor access list. I am attaching also to this declaration a sample of a DD Form 2345 for a particular individual. In my experience, about forty to fifty people attend a Closed Session of this nature. My understanding is that approximately the same number attended the Closed Session during which the subject technical paper was presented. The restrictive entry rules as explained above applied to the Closed Session during which the subject technical paper was presented.

I do not believe that any copies of the subject technical paper were given to the attendees at that particular Closed Session. My employer had a copy because I was a co-author. The copy has a warning printed on the first page, which states::

> This paper contains research findings and technology developments in airframe composites technology that may constitute a significant enhancement to the national defense, and to the economic vitality of the United States; therefore access by foreign firms, institutions or persons must be controlled. The provisions of the International Traffic in Arms Regulation (22 CFR pt. 121 et seq.), the DOD Industrial Security Regulation (DOD 5220.22-R) and the Department of Commerce Export Regulation (15 CFR pt. 770 et. Seq.) may be applicable to this submittal.

Consequently, not only was the attendance to the Closed Session restricted, the dissemination of the subject technical paper was also restricted.

While the attendees at the Closed Session would have been interested in the subject matter of the subject technical paper, many others that were not present would also be interested. The information in the subject technical paper presented at the Closed Session is valuable not only to those attending, but to numerous others that did not or could not attend. There are thousands in the defense industry that might have an interest but would not be aware of such a meeting or be unable to attend. The subject matter of the paper deals with composite fiber technology for providing strong and lightweight structural members. This technology has applications in many industries other than the defense industry, such as general aviation, automobiles, and boats. Consequently, there are countless numbers of individuals that may have interest in this type of information but are prohibited from attending because they lack the DOD requirement certification and do not work for qualified defense contractors.

The subject technical paper was not and is still not publicly available. It is not listed on any databases to my knowledge that are accessible to the general public. Also, to my knowledge, SAMPE will not provide copies of the subject technical paper to the general public.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dec 02, 2003
Date

Stephen D. Owens

INTERLAMINAR REINFORCED COMPOSITES DEVELOPMENT FOR IMPROVED DAMAGE TOLERANCE

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ABSTRACT

Studies have shown that more affordable composite structure can be achieved through the application of bonded/cocured designs. However, bonded/cocured joints without Z-direction reinforcement have demonstrated poor damage tolerance thereby limiting application of unitized designs on airframe structure. This paper summarizes several efforts within the Composite Affordability Initiative (CAI) - Pervasive program to evaluate and implement application of 3D textile preforms, stitching, and Z-fiber™ insertion technologies as a means to improve damage tolerance of composite structure. A review of the various Z-direction interlaminar reinforcement concepts and their limits of application will be presented. Specific applications of these technologies on CAI-developed structures will be reviewed. This paper also summarizes both the analytical and experimental work conducted to date on stitched and Z-fiber™ pinned skin-to-spar joints. Finally, this paper will address the current state-of-the-art in interlaminar reinforcements and suggest areas where further work is needed to prepare these processes for production.
